



To: ER Dunsmore, LLC

Date: April 29, 2025

Memorandum

Project #: 57818.00

From: Stephanie Wyman, PE, Civil Engineer

Re: Section 248 Primary Agricultural Soils Assessment

Introduction

At the request of ER Dunsmore, LLC ("Petitioner"), VHB has prepared this technical memorandum in support of a planned 4.95– megawatt ("MW") alternating current ("AC") ground-mounted solar project ("Project"). The Project array is located within a 30-acre fenced area inside an approximately 39.3-acre Project limits of work, located off Dunsmore Road in Saint Albans Town, Vermont (see Site Plan, *Exhibit DRS-TK-2*). The content of this technical memorandum presents the results of an assessment of the Project as it relates to the Primary Agricultural Soils criterion under 30 V.S.A. § 248(b)(5), which is given due consideration by the Vermont Public Utility Commission ("PUC") in its review of the Applicant's request for a Certificate of Public Good ("CPG").

Project Description

The proposed Project will consist of the installation of a 4.95-MW AC solar electric generation facility to be located within an approximately 30-acre fenced Project area.

The Project consists of ground-mounted, single-axis tracking modules mounted on metal racks arranged in rows extended north to south within an existing open field. The Project will involve the following Project elements:

- Approximately 12,425 photovoltaic panels installed on ground-mounted single-axis tracking racking systems, across 30 acres of the site. The solar panels will be coated with a non-reflective glazing to reduce glare from the array, standing approximately ten to fifteen feet off the ground at their highest point;
- A network of string inverters dispersed across the array connected with underground cables installed in protective conduit;
- Approximately 5,285 feet of agricultural-style perimeter fence, seven to eight feet in height;
- A temporary staging/laydown area for delivery and short-term storage of materials;
- Widening, re-aligning and improving approximately 1,550 linear feet of an existing farm road to provide a 16-foot-wide gravel access road to the solar site and agricultural fields;
- Replacing two undersized, crushed culverts with a 45-foot modular steel bridge, and precast concrete abutments;
- Extending the existing access road approximately 1,250 with varying widths from 16 feet to 12 feet, including turnaround areas;
- An approximate 1,640-foot extension of 3-phase power to the site for interconnection to the Project Area into the existing Green Mountain Power grid, from the existing distribution service on Dunsmore Road. This new line section will require approximately 8 new wooden poles approximately 35 to 45 feet above ground.

- Construction of one gravel wetland and simple disconnection stormwater treatment practices to treat stormwater runoff from the impervious surfaces;
- Two pad-mounted transformers, 2,500-kVA units located on two separate equipment pads, located in the central and east-central Project areas, with secondary oil containment providing 110% of the equipment oil volume with freeboard for 5 inches of rain, and;
- Up to approximately 0.2 acres of tree and brush clearing will be necessary to facilitate construction (areas where woody material will be removed with stump removal/grubbing), which will largely be limited to the Project's access road between Dunsmore Road and the proposed array.

Methods

Under 10 V.S.A. § 6001(15), a PAS is defined as:

(A) An important farmland soils map unit that the Natural Resources Conservation Service of the U.S. Department of Agriculture ("NRCS") has identified and determined to have a rating of prime, statewide, or local importance, unless the (Act 250) District Commission determines that the soils within the unit have lost their agricultural potential. In determining that soils within an important farmland soils map unit have lost their agricultural potential, the Commission shall consider:

- (i) impacts to the soils relevant to the agricultural potential of the soil from previously constructed improvements;*
- (ii) the presence on the soils of a Class I or Class II wetland under chapter 37 of this title;*
- (iii) the existence of topographic or physical barriers that reduce the accessibility of the rated soils so as to cause their isolation and that cannot reasonably be overcome; and*
- (iv) other factors relevant to the agricultural potential of the soils, on a site-specific basis, as found by the Commission after considering the recommendation, if any, of the Secretary of Agriculture, Food and Markets.*

(B) Soils on the project tract that the District Commission finds to be of agricultural importance, due to their present or recent use for agricultural activities and that have not been identified by the NRCS as important farmland soil map units.

VHB's review is limited to the NRCS soil map unit designations, where PAS soils are defined as those soils with a primary agricultural soil rating of 1 (most desirable) through 7 (least desirable) with some soils with a rating of 8 included. Soils of statewide importance have an agricultural value of 7 or less, and soils of local importance consist of selected soil types with an agricultural value of 8 or less. VHB conducted a review of the NRCS soil map data to determine if PAS were present on the Project site and prepared a site plan (see Sheet C2.00 of *Exhibit DRS-TK-2*) that depicts the following:

- Soil unit names, boundaries, and agricultural ratings for Franklin County from the NRCS;
- Proposed impact activity type;
- Primary agricultural soils, provided from the Vermont Center for Geographic Information ("VCGI") and based on NRCS soil data; and,

- 2013 aerial imagery provided by VCGI depicting the existing site conditions.

The Project limits of work, for the purpose of this assessment, includes the following components:

- Array (defined by and including the perimeter fence);
- Access drive improvements, relocation and extension, including turnaround areas;
- Temporary construction access drive widening;
- Temporary construction staging area;
- Improved crossing at Jewett Brook;
- Primary agricultural soil stockpile;
- Proposed underground power runs;
- Equipment pad locations; and
- Stormwater treatment practices.

Results

All of the approximately 39.8 acres within the Project limits of work are mapped as PAS, approximately 39.3 acres of which are determined to be undisturbed mapped PAS. The approximately 0.5 acres of disturbed mapped PAS include areas of existing access road, areas within Jewett Brook, and areas classified as Class II wetlands. As identified on sheet C5.00 of Exhibit DRS-TK-2 there is an existing farm road in need of improvement. The improvements to the existing farm road will be beneficial for site access to the solar facility and the continued access to the farm fields in continued agricultural use to the south of the array. Upon Project decommissioning the improvements to the existing farm road are to remain for agricultural use. Because of this, these improvements have been excluded from the calculations of impacts on PAS; therefore, the total potential impacts to PAS within the LOD have been determined to be approximately 37.7 acres. Soils present within the Project area defined above include the following, which are classified by the NRCS as Prime or Statewide importance, and would therefore meet the PAS definition:

- Covington clay (Statewide (b, if drained));
- Kingsbury clay, 0 to 3 percent slopes; (Statewide);
- Lordstown loam, rocky, 3 to 8 percent slopes (Prime);
- Georgia stony loam, 0 to 3 percent slopes (Prime);
- Georgia stony loam, 3 to 8 percent slopes (Prime);
- St. Albans slaty loam, 3 to 8 percent slopes (Prime)

The site plans provided show areas of PAS within the limits of work. Impacts to PAS fall into two categories.

- (i) Indirect impacts, which are areas within the Project area limits of disturbance which are not intended to be impacted but which may be as a result of construction traffic or other incidental operations. The total potential indirect impacts within the Project limits of work are approximately 33 acres ($\pm$).
- (ii) Direct impacts, which include known areas of excavation or other work described below. Direct impacts have been further broken down into two categories, temporary and permanent. Temporary direct impacts are those which will be restored at the end of construction. Permanent direct impacts are impacts during the life of the

Project, which will be restored at Project decommissioning with the exception of the existing farm road. Temporary and permanent direct impacts to PAS are described in the bullet points below.

As reflected in Table 1 – PAS Direct Impact Matrix, temporary direct impacts to PAS at the Project site will total approximately 2.6 acres (±) that would be restored following construction, which would include the following elements:

- Staging Area: During construction, approximately one foot of topsoil will be temporarily removed to facilitate a stabilized surface for material staging during construction
- Temporary Widened Access Road: During construction a portion of the access road will be widened to allow for construction vehicles to safely navigate to the site for deliveries.
- Trenching: Temporary impacts during construction include approximately four to six-foot-wide trenches within the site array to install underground power runs.

The following elements would involve direct impacts on undisturbed PAS for the life of the Project (permanent direct impacts). These soils will be stockpiled on-site consistent with AAFM guidelines and will be restored upon Project decommissioning, as further described in the Mitigation Measures section below¹.

- Access Road: The new access road within mapped PAS is proposed to be constructed with a minimum of 18" of gravel material with geotextile fabric, resulting in approximately 0.45 acres of PAS impacts. A portion of the existing farm road will also need to be realigned and improved to provide a 16-foot wide gravel access. The improvements to the existing farm road will remain in place following Project decommissioning for future agricultural use by the landowner. As mentioned above, these improvements have not been included in the calculations of impacts on PAS.
- Equipment locations: An area of approximately 0.03 acres will be excavated to a depth of approximately 3-4-feet for installation of the equipment pad required for transformer vaults/oil containment.
- Stormwater Treatment: The Project will utilize, to the extent practicable, simple disconnection treatment practices to treat stormwater runoff from the addition of the access road and equipment pads, and to treat areas of redeveloped impervious along the existing access road. In addition, a gravel wetland will be constructed to treat stormwater runoff from the equipment pads and areas of access road that are not able to be treated using simple disconnection.
- Grading & Vegetation Removal: The remaining impacts are associated with the necessary grading for access road drainage, installation of the bridge at Jewett Brook, and vegetation removal.

Table 1. Prime Agricultural Soils Direct Impacts Matrix.

Impact Type	Direct Impact (acres)
Temporary During Construction	2.6
Permanent for Life of Project	2.1

Mitigation Measures

As the Project will involve direct impacts to PAS during the duration of the Project's operations, the following mitigation measures will be incorporated to avoid a loss in the potential of on-site soils to support or contribute to an economically viable or commercial agricultural operation:

1. Any topsoil necessarily removed from the staging area during construction as well as soils disturbed from trenching will be placed in designated stockpile locations and restored in accordance with the *AAFM Act 250 Procedure: Reclamation of Vermont Agricultural Soils* and will implement best management practices for erosion prevention and sediment control ("EPSC"), including application of a permanent stabilization seed mix per an approved construction stormwater discharge permit authorization.
2. The Project will adhere to the requirements of the decommissioning plan in *Exhibit DRS-TK-7*, which includes requirements to restore PAS impacted by the Project to pre-construction location and condition and remediate, as necessary, soil that may be indirectly compacted as a result of the Project.
3. PAS excavated from the equipment pad locations, access road locations, and gravel wetland treatment practice and associated drainage will be first used as fill for the access road improvements to avoid the need for foreign structural fill to be brought in. Excess excavated PAS from these areas will be stockpiled for the life of the Project by soil type with soil horizon segregation in reverse order of excavation in accordance with the *AAFM Act 250 Procedure: Reclamation of Vermont Agricultural Soils*. Stockpiled PAS soils will be segregated from any non-PAS soil or other stockpiled material.
4. If requested by AAFM, to remediate PAS compaction due to the Project, upon removal of Project elements at decommissioning, the areas of Project within PAS that are currently used for agriculture can be tilled with a subsoiler to alleviate any potential soil compaction. Also, if requested by AAFM, the Project would agree to pre-construction soil/bulk density sampling as well as reclamation bulk density sampling to establish whether post-decommissioning remediation is necessary.

Conclusion

The Project will result in minimal direct impacts to PAS for the Project duration. These minimal impacts will be mitigated by PAS soil stockpiling and adherence to a PAS restoration plan with the Project's decommissioning plan in accordance with *AAFM Act 250 Procedure: Reclamation of Vermont Agricultural Soils*. PAS temporarily impacted during Project construction will be restored according to approved Project plans. Finally, any potential direct or indirect impacts from the Project may be mitigated by subsoil tilling, or other method, at decommissioning, if required. At the end of the Project's useful life, it will be decommissioned, and the site will also be restored to its existing condition to the greatest extent practicable, ensuring the preservation of agricultural soils over the long-term. Accordingly, it is VHB's conclusion that there will be no undue adverse effects on PAS as a result of this Project.